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AUTHOR Buck, Linda Lee
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ABSTRACT

This handbook is designed to aid educators as they serve handicapped students who are enrolled in regular programs. The emphasis of the handbook is on selecting an appropriate vocational program, developing an individualized education program (IEP), and preparing students for meaningful employment through effective teaching. Addressed in the individual sections of the guide are the following topics: understanding the nature of various types of disabilities; providing a continuum of services to handicapped students; developing an IEP; providing vocational evaluation services; adapting teaching strategies (curriculum adaptation, learning styles, and instructional techniques), utilizing alternative types of testing and methods of grading; employing various troubleshooting techniques to cope with problems in the classroom; providing support services; and offering job placement assistance. (MN)

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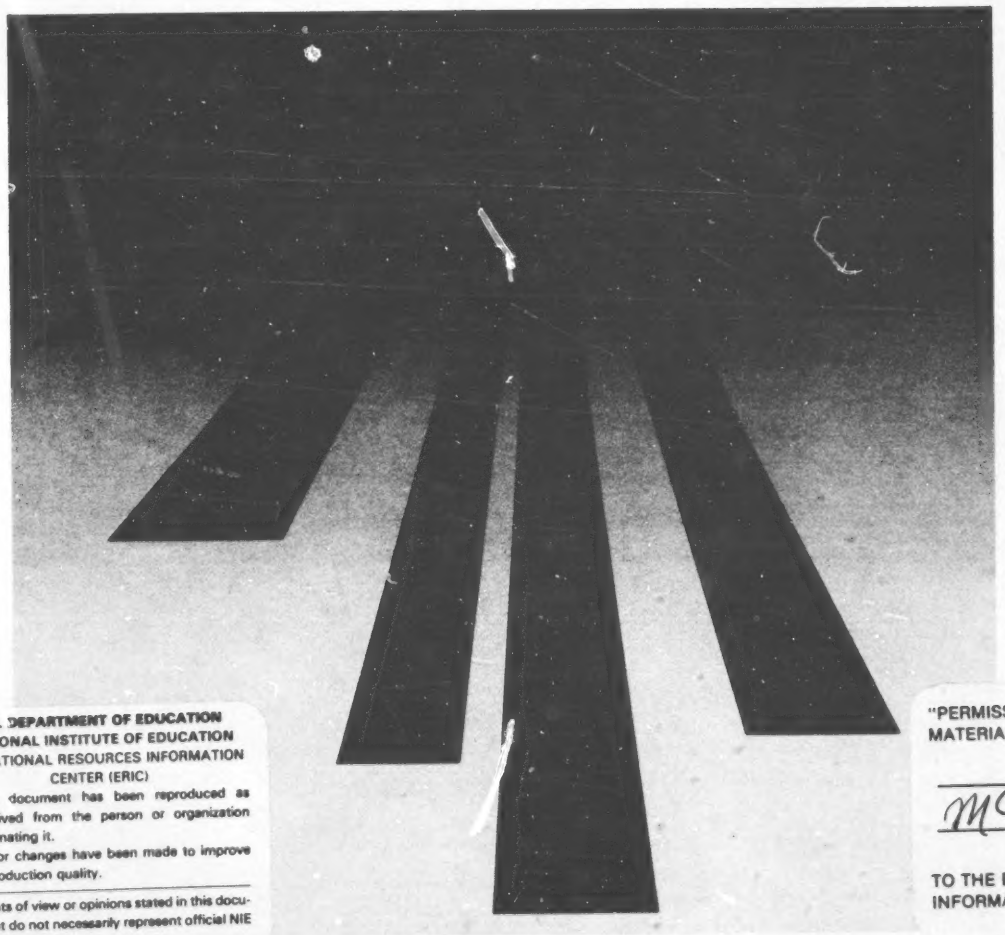
HANDBOOK ON MAINSTREAMING

HANDICAPPED STUDENTS IN VOCATIONAL EDUCATION



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The Ohio Advisory Council for Vocational Education 1982-1983

The Ohio Advisory Council is an agency, separate from the State Board of Education, composed of twenty-three concerned citizens representing business, industry, agriculture, labor, education, state government, various groups with special needs and the general public. The Council is dedicated to the concept that investment in human resources through vocational education is vital to our economy.

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Dr. Martin W. Essex
Executive Director

Dr. Ralph E. Bender
Research Consultant

Mrs. Chloe Worley
Administrative Assistant

Foreword

This Handbook was prepared to aid teachers of vocational education in serving the increasing number of handicapped students who are enrolled in regular programs. Such students are termed "mainstreamed." Emphasis in this reference is on selecting an appropriate vocational program, developing an individualized educational plan (IEP), and preparing the student through effective teaching for successful employment.

The Handbook should prove helpful in understanding the needs of the handicapped and their characteristic behaviors that imply practices and procedures to use in teaching. The suggested strategies in curriculum adaptation, instructional techniques and alternative types of testing and grading should prove effective for most teachers in many classroom situations. Supportive services personnel, community agencies and organizations and other helpful sources are identified. Vocational educators are encouraged to copy and disseminate this Handbook as needed.

Linda Lee Buck, vocational special education coordinator of the Columbus VEPD Schools, prepared this Handbook for the Advisory Council.

E. W. Kavanagh
Chairperson

Martin W. Essex
Executive Director

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Introduction To The Handbook

Vocational educators have made a significant contribution that is both far reaching and long lasting to the quality of living of handicapped youth. Without vocational preparation, many handicapped students face economic dependency and an adult life devoid of the human dignity that comes from work.

This Handbook is designed to aid educators as they serve increasing numbers of handicapped students mainstreamed in vocational education programs. That such services are vitally needed is widely recognized; that such services necessitate adjustments in both curriculum and instructional strategies is equally apparent. Practices and procedures which aid the vocational educator in such adaptations are provided herein. No attempt is made to include every facet for providing services to handicapped vocational students.

Who Are The Handicapped?

Responsibility for identification and initial placement of a handicapped student into special education programming resides with the special education team. This team consists of a teacher(s), an administrator(s), a psychologist and other professionals, as needed, such as nurses and therapists. These team members use two or more assessment instruments as well as their professional expertise to fulfill the legal mandate for a multi-factored assessment of each handicapped child. Generally, special education placement occurs early in a child's school years, but it can occur at any point, based on need.

In Ohio, handicapped students are identified as those young people under twenty-two years who have one or more handicapping conditions. These students may require some kind of modification either in the vocational curriculum or in the equipment used in the vocational program. Aside from the ongoing services by work-study coordinators, handicapped students may also require the supportive services of specialized educational personnel such as interpreters, tutors, the vocational special education coordinator, and reading and math specialists. The definition of each handicapping condition as well as a list of behaviors typically exhibited by students in each category follow. In each case the demonstrated behaviors are specifically listed because they adversely affect the student's educational performance. They may inhibit learning, a primary problem requiring the focus of the vocational instructor. (For extended definitions of handicapping conditions, refer to Ohio Rules for the Education of Handicapped Children.)

DEVELOPMENTALLY HANDICAPPED (mentally retarded) — SIGNIFICANTLY SUBAVERAGE GENERAL INTELLECTUAL FUNCTIONING EXISTING CONCURRENTLY WITH DEFICITS IN ADAPTIVE BEHAVIOR.

- Short attention span
- Comprehension and memory difficulties
- Difficulty with abstract reasoning
- Poor self-image
- Inability to generalize
- Socialization patterns slow and self-centered

LEARNING DISABILITIES -- DISORDER IN ONE OR MORE PROCESSES IN UNDERSTANDING LANGUAGE (SPOKEN AND/OR WRITTEN) WHICH MAY BE MANIFESTED IN AN IMPERFECT LISTENING, THINKING, READING, WRITING, SPELLING, OR MATHEMATICAL ABILITY.

- Either excessive or minimal movement
- Perceptual difficulty
- Memory disorders
- Inattention or low motivation
- Faltering coordination

SEVERE BEHAVIOR HANDICAPPED — LONG-TERM MANNERISMS LIMITING EDUCATIONAL FUNCTIONING, USUALLY WITH EARLY ONSET.

- Unexplained learning inability (not mental, sensory, or physical)
- Inability to work well with peers or teachers
- Atypical behavior(s) under normal conditions
- General unhappiness or depression
- Psychosymptomatic fears with personal/school problems

HEARING IMPAIRED — CONDITION(S) SO SEVERE THE STUDENT CANNOT PROCESS LINGUISTIC INFORMATION BY HEARING.

- Staring at speaker to lipread
- Distracting sound(s) due to hearing aid(s)
- Understanding only partial content
- Difficulty following oral commands
- Double checking content details
- Persistent physical symptoms (headaches/earaches)

ORTHOPEDICALLY HANDICAPPED — MAY INCLUDE ONE OR MORE OF THE FOLLOWING AMBULATORY PROBLEM AREAS: CONGENITAL ANOMALY (E.G. CLUBFOOT, SPINA BIFIDA, ABSENCE OF SOME MEMBER); DISEASE (E.G. POLIOMYELITIS, MUSCULAR DYSTROPHY, BONE TUBERCULOSIS); OTHER AREAS (E.G. CEREBRAL PALSY, AMPUTATION, FRACTURES OR BURNS WHICH CAUSE CONTRACTURES).

OTHER HEALTH IMPAIRED -- AN ENCOMPASSING GROUP CHARACTERIZED BY LIMITED STRENGTH, VITALITY, OR ALERTNESS DUE TO CHRONIC OR ACUTE HEALTH PROBLEMS SUCH AS: HEART CONDITION, NEPHRITIS, ASTHMA, SICKLE CELL ANEMIA, HEMOPHELIA, EPILEPSY, LEUKEMIA, ARTHRITIS, CYSTIC FIBROSIS, MULTIPLE SCLEROSIS, OR DIABETES.

MOST HEALTH PROBLEMS IN THIS GROUP ARE OF LOW INCIDENCE. YET THEY PRODUCE SIMILAR CHARACTERISTICS:

Low tolerance for prolonged physical activity

Slowed work pace

Lethargic or hyperactive behavior due to medication(s)

Environmental aggravations (dust, asthma)

Continuum of Services

It is estimated that ten percent of the population is handicapped. Ohio has a strong commitment to serving the handicapped in vocational education. In 1982, secondary and postsecondary vocational programs served 20,059 handicapped students.

Ohio's Vocational Education and Special Education Departments have cooperatively developed a continuum of vocational placement options for handicapped students. Options range from enrollment in vocational programs, which include the use of supplemental aids and specialized supportive personnel, to enrollment in regular vocational programs without adjustments to curriculum or instructional strategies.

Students requiring maximum supportive services may receive their vocational training in a program designed expressly for special education students. In 1982, "special needs" vocational programs served 5,424 handicapped students. Students who may, with the aid of supportive services, enroll in and benefit from regular vocational programs are termed "mainstreamed." These two options represent extremes of the least restrictive environment along the vocational placement continuum. For yet other students who may require varying degrees of program adjustment in addition to supportive services, the appropriate least restrictrive environment lies somewhere between the extremes. The "least restrictive environment" means that a handicapped student must be educated with nonhandicapped students to the maximum extent feasible. This practice was mandated by Public Law 94-142 to guarantee appropriate programming for handicapped students, which would allow them to achieve their maximum vocational potential.

Ohio's current goal, as documented in the State Plan, is to decrease special vocational programs as increased numbers of handicapped students are successfully mainstreamed into regular vocational education programs.

The goal of vocational education programs is to prepare students for employment. Again, handicapped students will achieve varying degrees of independence through employment. Completely mainstreamed students may become independent workers while students who require extensive program adjustment and supportive services may require a similarly structured work environment.

Without vocational education, many handicapped students are unable to prepare for and participate in employment. Through vocational education, such students may realize their maximum potential in the adult world of work.

The Individualized Educational Plan (IEP)

Required by Public Law 94-142 for all students identified as needing special education services, the Individualized Educational Plan (IEP) is a tool used to ensure appropriate program placement and programming for handicapped students.

The IEP, in its simplest form, is a written document developed during a planning conference involving the individuals most concerned with and responsible for a handicapped student's education -- teachers, the work-study coordinator, the school principal, representation from vocational education, other resource personnel, parents, and the student (if such participation is appropriate and beneficial).

The following components must be addressed and documented by the IEP team:

- A statement of the student's present educational performance levels
- A statement of annual goals, including short-term instructional objectives
- A statement of the specific special education and related services to be provided to the student and the extent to which the student will be able to participate in regular educational programs
- The projected dates for initiation of services and their anticipated duration
- Appropriate objective criteria, evaluation procedures and schedules for determining, at least annually, whether short-term instructional objectives are being met.

Under PL 94-142, the definition of special education also includes "vocational education if it consists of specially designed instruction, at no cost to the parents, to meet the unique needs of a handicapped child." Therefore, the IEP should describe the modifications and adaptation of instruction and equipment and the supportive/related services that are necessary for the handicapped student to participate in vocational education.

It is possible that students with a handicapping condition may not be viewed as handicapped in terms of a specific vocational education program. If the students are able to succeed in a regular vocational education class without direct special education assistance, curricular modification, or materials adaptation, a statement of the full extent of their participation in regular vocational education is all that must be included in the IEP. For other handicapped students, key indicators of what the handicapped students need to make a regular vocational class appropriate should be documented in the IEP.

After the student has participated in vocational evaluation, the professional team meets to review the report and recommendations of the evaluator and the stated goals of the student. If placement in a vocational program is desired, a formal IEP conference is scheduled.

The vocational instructor, or another representative from vocational education (such as a vocational special education coordinator, a vocational supervisor, or a vocational guidance counselor), attends the conference to assist the team in the placement decision and to add the goals and objectives of the specific vocational program to the IEP if vocational placement is determined to be appropriate. The greater the number and extent of changes in curriculum, instruction, or equipment, the greater the need will be to directly involve the vocational instructor in the IEP conference.

Vocational Evaluation Services

Choosing an appropriate occupation is an important and often a complex task. For the handicapped, it can be even more difficult because they are often ill-prepared or under-prepared to make appropriate vocational choices. Similarly, they may lack the skills to measure their specific abilities compared with the specific demands of vocational programs and actual jobs. Their knowledge of job descriptions, worker titles, tool names and uses, and technological processes may be weak. This demonstrated need created specific evaluation/assessment programs.

Typically, students are referred to vocational evaluation programs during the tenth grade. The evaluation process is comprehensive and can range from a few days to a few weeks, depending upon the number and availability of services and experiences offered by the particular vocational evaluation laboratory.

What is Vocational Evaluation?

Vocational evaluation is a specific form of assessment. It is a complete process that uses work, real or simulated, as the focus. This process also includes the gathering of medical, psychological, social, educational, cultural, and economic data. Career counseling is also provided as a component of the evaluation process. The emphasis is on hands-on activities which represent WORK. The purpose of vocational evaluation is to adequately assess students and then recommend appropriate placement in vocational programs that provide a clear transition to the real world of work.

Who Evaluates?

The vocational evaluator is specifically trained and certificated by the State Department of Education. A teacher-educator is assigned to administer the in-service program leading to certification. Many vocational evaluators were formerly professionals in vocational rehabilitation, where vocational evaluation initially appeared. Evaluators' responsibilities are pertinent to the actual demands and conditions of the world of work.

The Work Evaluation Process

The one required component in this category is the work itself, and this is perhaps best illustrated by using the work sample. Work samples are well-defined employment activities which simulate the complete range of work (motions, mental functioning, performance demands, operations, and use of materials and equipment) pertaining to a particular job or occupational group. The objective of using work samples is to assess job skills and work-related behaviors. A typical work sample can be:

- an actual job used as an evaluation unit
- a simulation of a real operation
- a trait sample assessing a single factor, such as finger dexterity
- a cluster trait sample measuring a group of traits.

The major advantages of the work sample method include:

- the actual work sample is the closest approximation of real work within the vocational evaluation facility
- the work sample provides exposure to and experience in a variety of jobs
- real job performance is required
- it not only assesses skills but also reveals aspects of the student's personality, interest, and attitudes toward the job.

Resource Tools

Resource tools may be divided into: occupational information, student information, job analysis, and audio-visual materials.

Occupational Information includes the Dictionary of Occupational Titles and, primarily, job exploration systems.

Student Information includes data concerning the student from professionals (such as physicians, counselors, and social workers) and lay people (such as parents and former employers) in a position to provide meaningful information.

Job Analysis is the systematic study of an occupation which may include: the methods and techniques used in processing data, the materials and products which result, and required worker traits.

Audio-Visual Materials are written, printed, visual, or auditory media such as videotapes, films, slides, and photographs which improve client self-evaluation and encourage vocational exploration.

Applied Tools

Applied tools are activities in which the evaluator engages directly during the evaluation process. They may include the following techniques:

Interviewing procedures aid student understanding of the vocational evaluation program, the evaluator's understanding of the student's needs, and mutual goal orientation.

Observational procedures are methods for purposefully watching student activity (focusing on productivity, behavior patterns, worker interaction) and assisting the evaluator in assessing the student's overall functioning level.

Reporting procedures include recording, organizing, integrating, and communicating student data and observations.

Use of Evaluation Reports

The evaluation report is a useful tool for the vocational instructor. Such reports usually summarize a student's characteristics in terms of physical traits and tolerances, cognitive skills and aptitudes, and work habits and attitudes. The student's expressed vocational interests are also listed.

A look at some sample listings of these traits may help to demonstrate their relationship to a vocational program.

PSYCHOMOTOR SKILLS	COGNITIVE SKILLS	WORK HABITS/ATTITUDES
Physical strength	Following directions	Hygiene and grooming
Manual dexterity	Oral	Independent living skills
Fine-finger dexterity	Visual	Social maturity
Spatial judgment	Written	Self-image
Eye-hand coordination	Multi-step	Acceptance of change
Physical tolerances	Abstract reasoning	Acceptance of rules
Standing	Comprehension	Frustration level
Sitting	Communication skills	Anxiety level
Walking	Oral	Manners
Stooping	Written	Cooperation
Bending	Retention	Initiative
Lifting	Numerical concepts	Perseverance
Carrying	Basic arithmetic	Reliability
Grasping	Addition	Disposition
Balance	Subtraction	Self-control
	Multiplication	Peer relationships
	Division	Acceptance of authority
	Fractions	Acceptance by others
	Decimals	Leadership ability
	Measurement skills	Realistic values
	Linear	Work pace
	Cups, spoons	Neatness
	Pounds, ounces	
	Time	
	Diagram reading	

These traits, abilities, habits, and attitudes are but a few of those that could be mentioned. Obviously, vocational instructors will be concerned with those items which particularly pertain to their programs. For instance, a food service instructor would prefer to enroll a student who has the following characteristics:

Shows cleanliness in person and attire	Speaks clearly
Follows oral and written directions	Works unsupervised
Works steadily	Works under pressure
Reads menus/orders	Likes working around people
Recognizes common food items	Can measure by cups, pounds
Understands need for safety rules	Has basic knowledge of utensils and food preparation processes

Often, a handicapped student will need assistance in making an appropriate program choice. A vocational guidance counselor and/or a vocational instructor may use the evaluation report as a resource tool in aiding the student with the decision-making process.

Consider the case of **JOHN.** John knows he wants to become a mechanic . . . he has always wanted to become a mechanic and nothing else will do! We know that there is an entire cluster of programs that are "mechanical." Auto Mechanics, Auto Parts Sales and Service, Diesel Mechanics (trucking), Diesel Mechanics (heavy equipment), Outdoor Industrial Equipment, and Automotive Technician all qualify. John may not know of all these "mechanical" options; however, we will assume that the evaluator has explained them and John now says he wants to enroll in either the Diesel-Trucking or the Auto Mechanics Program.

Where does John belong? How can his evaluation report help the professional team in securing an appropriate vocational program for John, based on his abilities and interests? Given this problem, a vocational instructor offered this observation:

> Diesel trucking requires a great amount of physical strength to use very large wrenches. Gross manual dexterity is important, but fine-finger dexterity is not as necessary. Both programs require eye-hand coordination, the ability to understand and follow oral, multi-step and visual directions, and the ability to work as an accepted team member. The student should be able to read a diagram or blueprint, but an automotive course requires greater skill because the flow charts for electrical and hydraulic systems are more complex in this area. The textbook in the diesel class is written on a 13-14 reading grade level but, then again, the service manuals for automobiles are not that easy to read, either.

Keeping in mind the representative list of characteristics immediately preceding this section, the following is an evaluation of a particular student, incorporating the same three areas. Again, remember that this is only a partial listing, a representative sampling.

JOHN'S PSYCHOMOTOR SKILLS	JOHN'S COGNITIVE SKILLS	JOHN'S WORK HABITS/ATTITUDES
Has good manual dexterity	Reads at the 4th grade level	Displays good grooming
Has limited fine-finger dexterity	Has limited understanding of abstract reasoning	Works well with others
Exhibits great physical strength	Can measure with 12" ruler to nearest 1/4"	Completes tasks
Demonstrates good eye-hand coordination	Can add, subtract, or multiply by two numbers	Accepts criticism/authority
Displays good balance	Cannot divide at all	Works neatly
	Can follow oral, visual, multi-step, and minimal written directions	Shows good work pace
	Cannot work with decimals or fractions	Asks for help when needed
	Can read/use diagrams/ blueprints	Is motivated to work

A careful examination of John's evaluation report indicates that he would be better suited for the Diesel-Trucking Program than for the Auto Mechanics Program on the basis of:

Physical strength and stamina
Appropriate dexterity skills
Limited understanding of abstract concepts/basic diagrams and flow charts.

On the other hand, the diesel-trucking instructor will probably need to seek the assistance of the special needs reading and math specialists to tutor John regularly in vocationally relevant academic skills.

The combination of the evaluator's report and the vocational instructor's expertise will greatly aid the team in making an appropriate vocational placement. At all times the placement team must ensure that the selection process is consistent to avoid screening in or screening out certain students, based on characteristics and skills that are irrelevant to the actual training program.

Strategies In Teaching

Vocational instructors often ask for specific suggestions as to teaching strategies and adaptations which will meet the needs of handicapped students in vocational classrooms and laboratories. The following section addresses those concerns. Problem areas (equipment modification, grading, etc.) are treated individually. Where problems affect handicapped students in general, a breakdown of specific handicapping conditions is not attempted; where needed, the individual conditions are addressed.

Many of the suggested strategies and techniques work just as well for nonhandicapped students. This fact serves to remind us that handicapped students are more like regular students than unlike them. This "how to" section should enable us to better serve **ALL** vocational students.

Curriculum Adaptation

One of the first tasks faced by a vocational instructor is the organization and development of a course of study for his/her program. Both occupational and individual needs must be considered in assembling a curriculum. These program components are generally stated in terms of competencies each respective vocation requires. Given state-of-the-art technological advancements in the world of work, placement and skills acquisition for the regular student are difficult tasks. With the handicapped student, these components are even more difficult to master. The vocational instructor must precisely identify those competencies required to provide handicapped students with entry-level skills. Once those appropriate skills are identified, the instructor must then rank those competencies in a meaningful way (i.e. chronologically, ascending/descending level of difficulty, most/least important). These basics form the foundation of each student's vocational program. For some handicapped students they may form the entire curriculum, while for others these basics serve as a foundation upon which more complex tasks may later be added.

Even though task mastery is important, the vocational instructor must also address areas other than those required on the job. These might include such things as job seeking and keeping skills, consumer skills, and independent living skills. Some handicapped students mature both physically and mentally at a slower pace than traditional or regular students. They may have an inherent self-concept deficiency to overcome in addition to learning deficiencies. Somehow they feel as though they never quite "measure up." Finally, compounding these variables, is the very real difference in vocational maturity. Thus, meeting the curricular needs of each handicapped student is no small task. The following teaching strategies incorporating equipment/materials modification, altered testing and grading forms, as well as the troubleshooting guide should aid the instructor in more effectively working with handicapped students.

Learning Styles

Teaching the student the way he/she learns best is the first step toward ensuring teaching/learning success. This identified "best mode" is the student's learning style. Various names are given the different learning styles; the most common can be labeled (Tindall & Associates, 1980):

1. **Auditory language** -- learns, understands, and remembers best from hearing the spoken word.
2. **Visual language** -- learns best by seeing words in books, on chalkboard, taking notes, etc. Retains/uses this information best by reading it.
3. **Auditory numerical** -- learns best from hearing numbers and oral explanation. Does problems mentally.
4. **Visual numerical** -- requires seeing numbers written to work with them.
5. **Kinesthetic** -- needs to touch or experience problems realistically, a hands-on approach.
6. **Combination** (Auditory-Visual-Kinesthetic) -- needs total involvement, a combination of forms of stimuli.

Another focus of learning styles concerns the preferred student learning environment. One student may prefer to work alone and is most successful working independently. Another student, however, not only may prefer to work with one or more peers but also may increase his/her learning from group interaction.

The use of preferred feedback styles allows students to express what they learned in the most effective manner. The orally expressive student prefers to "tell" what he/she knows while the written expressive student can present his/her proof of learning much better in written form.

Many learning styles inventories are available for classroom use. Some can be administered by the classroom teacher to informally assess learning while others require administration by a specialist. In addition, supervisors, vocational special education coordinators, and other specialists can provide vocational instructors with further information about learning styles. Actually, the vocational instructor can often determine preferred learning styles by observing how students choose to work in the classroom/laboratory or by how students react to various instructional materials and types of presentation. This knowledge may provide the vocational instructor with an additional, useful educational tool.

What's your learning style? It may affect the way you teach -- and it may be in conflict with the way some of your students learn!

Instructional Techniques

CURRICULUM -- Secondary-level curricula for handicapped students should enhance vocational and personal independence and exhibit the following characteristics :

1. Individual objectives should specify skill areas, industrial methods, performance criteria, and evaluation methods.
2. General performance objectives should specify steps to attain the desired skill(s).
3. All objectives should provide frequent monitoring and evaluation of the instructional tactics and student performance.
4. Objectives should be short-range and concrete.
5. Frequent student feedback should be built into the structure.

ORGANIZATION -- Once student objectives are determined, instructions for accomplishing those objectives may have to be modified. The instruction should be:

1. Organized. Review the plan. Are the steps logical? Are they sequential? Is later instruction based on material already learned?
2. Specific. Students need to know exactly what to do. Point out obvious connections.
3. Visual. Whenever possible, demonstrate what must be done using films, slides, drawings, and simple charts and diagrams as aids.
4. Divided. Present material in small units and allow time for mastery.
5. Checked. Repetition is the key. Check often to see whether students can demonstrate understanding of each task.
6. Overlearned. Check periodically to make sure students remember important operations and encourage practice.
7. Reinforced. Praise the students for work accomplished, no matter how small the task. New assignments are the result of satisfactory mastery of techniques.

Equipment/Materials Modification

The educational progress of special needs students can be enhanced through the selection of appropriate instructional materials. There are a number of factors to consider in evaluating instructional materials for classroom use.

Instructional materials should:

- be written at a level the student can understand.
- include objectives stated in behavioral terms made known to the student.
- include appropriate pre-assessment materials to identify previously mastered skills of the student.
- be designed in a sequential structure, incorporating level of difficulty.
- include instructional objectives that provide a variety of learning activities.
- include short-term, post-assessment activities to measure mastery of content skills.

Modifying Equipment

Much of the equipment used in vocational skill preparation classes by "regular" students can also be used by handicapped students without any or only minor modifications. Such equipment modifications for handicapped students include:

HEARING IMPAIRED

A red light connected to the switch indicating when the machine is in operation.

Bells connected to a light that turns on when the bell rings. This is applicable on typewriters, class bells, timers, fire alarms, emergency procedures, telephones.

VISUALLY HANDICAPPED

Control dials and switches that are easily accessible.

Special control dials with actual rather than visual markings--brailled tape or raised marks can be used.

Auditory rather than visual warning signals.

Guard plates (where feasible) on power equipment.

Specially designed communication and measuring tools and other devices are available and should be considered for the visually impaired student on an individual basis.

ORTHOPEDICALLY HANDICAPPED

Guard plates (where feasible) on power equipment.

Machine switches on power equipment moved for easier accessibility.

Semi-stationary equipment put on variable height bases.

DEVELOPMENTALLY HANDICAPPED

Use of jigs and fixtures to simplify the production process and/or permit the safe, accurate use of small power tools.

Adapting Printed Materials

Many existing printed materials could be used with handicapped students with any of the following accommodations (based on student need):

1. Convert print to audio tapes --
   a. Maintain high-quality sound.
   b. Determine comprehension through oral questions.
   c. Incorporate periodic breaks in each listening session.

2. Highlight main ideas --
   a. Use a translucent felt-tip marker.
   b. Use black-out marker.

3. Cut-and-paste revision --
   a. Cut out only ideas and concepts you want to present.
   b. Supply appropriate headings.

4. Translate into graphic aids —
   a. Charts
   b. Graphs
   c. Maps
   d. Mock-ups
   e. Models
   f. Real objects and materials
   g. Illustrations

5. Reorganize and sequence logically —
   a. Ideas
   b. Tasks
   c. Directions

6. Use advance organizers --
   a. Outlines
   b. Pretests
   c. Unit questions
   d. Special vocabulary definitions
   e. Study guides
   f. Chapter summaries
   g. Chapter objectives
   h. Background information

7. Rewrite materials --
   a. Simplify
      (1) Vocabulary
      (2) Graphic aids
      (3) Format
   b. Reduce
      (1) Length of sentences
      (2) Length of paragraphs
      (3) Length of unit or segment

8. Provide for closure --
   a. Present the material in "retainable" units.
   b. Establish a time line for completion of assignments.

9. Include a feedback system —
   a. Provide immediate feedback on performance.
   b. Include self-checking answer keys.

Alternative Types of Testing

Given sufficient opportunity, most students display a strong will to succeed in the classroom. While this is true of most students, it is even more true for handicapped students when it comes to test taking. Often they feel inferior to regular students and are even more compelled to excel during examinations. Yet almost as often (chiefly by omission rather than commission), classroom teachers frustrate these students' attempts to succeed by administering tests that handicapped students have few chances in passing.

By taking some additional planning time, you can enhance their chances of passing and still cover the same material. The following list of **DO's** and **DON'T's** will help you construct effective test materials.

	DON'T		DO
1.	Use long lists of materials.	1.	Arrange lists (matching) and material into small, "retainable" units.
2.	Rely on single-form or overly long directions.	2.	Use clear, precise, uncomplicated directions.
3.	Overemphasize negatives.	3.	Construct test questions that stress the positive and pertinent.
4.	Overwhelm students.	4.	Give several short tests over recent material, instead.
5.	Depend exclusively on written responses.	5.	Allow students to point, give oral answers, and display demonstrations whenever possible.
6.	Assume all handicapped students take tests the same way.	6.	Individually assess each student and select a test format that guarantees a relative measure of success for each student.
7.	Stress timed tests.	7.	List point values for each question so students can proportion their time.
8.	Forget optimal testing conditions.	8.	Place students away from as many distractions as possible and test early in the day.
9.	Overlook mastery of tested material.	9.	Remember that skills acquisition and mastery are the stressed areas for the real world of work.

By bearing in mind these few, helpful reminders, you can significantly improve your testing skills. More importantly, however, by remembering your student population, you can ensure a relative degree of success and instill a real sense of competition and success in your handicapped students.

Alternative Methods of Grading

Before attempting to modify existing grading systems, vocational instructors should check with building administrators to see if proposed changes conform to local district policy. Having done this, there are certain grading alternatives vocational instructors might pursue to benefit handicapped students.

Any grading system should inform: (1) the student of his/her performance in relation to stated goals; (2) parents of the student's progress; (3) the teacher of the student's progress so that he/she can re-evaluate teaching methods, techniques, and possibly even goals and objectives. Testing furnishes some aspects of information used in evaluating; however, the result of evaluation is determining the level of student competency. The Individualized Educational Plan (IEP) for a secondary handicapped student should consider the student's special needs: changes in course requirements, modifications of curricular methods, materials to meet graduation requirements.

Examples

The following types of grading systems can be used for an individual student, based on his/her IEP, or adapted for a whole class or program to meet a wide range of learning needs.

1. MASTERY LEVEL OR PERFORMANCE/SKILLS SYSTEMS -- Mastery level systems for determining performance are commonly used. With modifications, criterion systems can be adapted for the handicapped in the traditional secondary system.

   This system should allow the teacher and student to determine the type and number of activities to evaluate student progress and be reflected in grades. Mastery systems break the content into several steps. Activities to complete each step may incorporate individual abilities and learning styles.

   The majority of criterion systems are a pretest/posttest measure to select a starting point for instruction and to determine completion of content. Thus, when a student demonstrates proficiency at an acceptable level, credit is given and the student progresses to the next level of learning.

   Some problems associated with the mastery and criterion systems include large classes and ceiling levels that may be too low for the more advanced student. In addition, these systems require more teacher time and the possibility that students may be rewarded for mediocre work. The budget of the school system may also limit the use of this system. However, these systems do allow for individualized attention and grading options.

2. STUDENT SELF-COMPARISON -- Self-evaluation is strictly individualized. This method measures the gains the student makes toward achieving the objective of the curriculum. It does not compare students in the same class. Competency check lists are another form of self-comparison which have been widely used for basic reading and math skills at the lower elementary grades and in developmentally sequenced curriculum. Such checklists provide an excellent basis for IEP development. These checklists lend themselves to developmental and skill development curricula, some content courses, and vocational preparation programs.

3. CONTRACTING -- Contracting for grades has been an outgrowth of applying behavior modification procedures to classroom instruction and has been common practice in many courses at the secondary school. The contract is an agreement between the teacher and student that completing specific activities will meet the requirements for an agreed grade or grading period. Contracting should incorporate the student's abilities as well as levels of achievement and thus lends itself to individualized instruction. When contracting is used for handicapped students, parents should be informed. Contracting should also be noted on the IEP.

4. MULTIPLE GRADES —The premise of multiple grading is to reward the student for progress, even though all areas of achievement may not be satisfacatory. One type of multiple grading involves three areas: ability, effort, and achievement. Ability reflects the student's growth in the content area and is based upon the student's expectations of grasping the information presented. Effort reflects the teacher's judgment as to how hard the student tried. Achievement is a comparison of one student's accomplishments to those of other students in the same class. The final grade could be an average of all three grades.

Another variation of this system is to use letter grades with subscript numbers that indicate the student's level of reading or math or writing. An example would be that if a student receives a C_4, this would be interpreted to mean the student's performance was at the average level or C, but instruction was given at the fourth grade reading level. Less stigmatizing might be a coded grade of C_1, C_2, or C_3, with C meaning the student performed C-level work while the subscripts mean the following: C_1 above grade level, C_2 on grade level, and C_3 below grade level.

5. SHARED GRADING — The concept of shared grading implies that at least two teachers are involved in determining a grade for a course of study and has been used in special education when a resource teacher and regular educator work cooperatively to determine a handicapped student's grade for a course. This system is feasible when the resource teacher is tutoring the student in the same content area(s) taught in the regular classroom. If the handicapped student is enrolled in a regular math class and receives supportive assistance in math from the resource room teacher, then both would cooperatively determine the grade for the math class. Shared grading could use multiple grades, contracts, or mastery systems.

6. POINT SYSTEM — Points are awarded for specific activities and are accumulated. A percentage figure is then applied to determine the various points for grades. If such systems are used, they need to be flexible and give equal weight to learning activities other than paper and pencil tests. Because many handicapped students have difficulty with arithmetic, reading, writing, or working under time constraints, timed tests automatically work to their disadvantage. Moreover, it would help all students, not just handicapped students, to equalize the point values of assignments.

Troubleshooting Guide

Given the extensive, preceding suggestions, the vocational instructor may also need a simplified, on-the-spot method of addressing concerns as they appear in the classroom. The following checklist identifies possible concerns on the left and addresses those concerns on the right.

1. What kind of class arrangement do you have? Large group Small group Individual(s) Modules	1. Have you tried? Self-(Programmed) study Peer tutoring Specialist(s) Instructional activities
2. What physical limitations do you have? Size Layout Machines Laboratory Lighting	2. Have you tried? Rearranging Grouping related areas Varying work setting(s)
3. What is accessible to students and what is controlled? Laboratory/Workshop supplies Inventory control Special equipment/materials	3. Have you made sure? Routine items for work/cleanup are readily accessible in the work area You, an assistant, or senior student keep stocks current Students sign for equipment/materials in their use

4. What about classroom rules? Safety Clarity Explicitness Consequences	4. Have you tried? Supervising ALL work areas Differentiated rules (according to ability) Varying responsibility levels Consistency in reward/ punishment
5. How do you present material? Lecture Student participation Tape Demonstration Other	5. Have you tried? Varying content: —Amount —Time interval —Level Varying structure: —Review, advanced, traditional learner —Memory aids —Active student involvement Varying type: —Consider handicapping condition(s)
6. How do you grade? Consistency How When Clarity	6. Have you tried? Varying grading system: —Homework —Types of tests —Emphasis (percentages) —Special projects Varying reinforcement system(s): —Notes to parent(s) —Nongraded practice(s) —Free time —Special activities —Progress charts
7. How do you practice content? Written Oral Demonstration	7. Have you tried? Varying structure: —Time for practice —Direction—Self/Teacher —Difficulty
8. What materials (aids) do you use? Audio-Visual Texts Workbooks Games Projects	8. Have you tried? Copying Recognition Recall with cues Recall without cues
9. How do you test for mastery? Written Oral	9. Do you allow for? Level(s) of difficulty Flexible time interval(s)

Supportive Services

Handicapped students can benefit greatly from supportive services along with their participation in vocational education. To ensure success, vocational education supervisors and instructors should coordinate arrangements with special education, vocational rehabilitation, and outside support agencies.

The most common supportive services provided in vocational education include:

1. Individual instruction in vocational content areas;

2. Reader and/or guide for the blind, interpreter for the deaf, and attendants for the physically handicapped;

3. Fundamental individual or small group remedial instruction;

4. Specialized vocational counseling (for students and parents);

5. Specialized job placement and follow-up services;

6. Contracting with outside agencies to provide specialized services the vocational program cannot provide.

Other supportive services such as physical, occupational, and speech therapy as well as medical and psychological evaluations are also needed by many handicapped students in the vocational education setting. The important point to make here is that vocational educators have the aid and expertise of support services personnel available to help them as they seek to serve handicapped students.

Supportive Personnel

Two additional types of special supportive services personnel can assist vocational instructors of handicapped youth; these are the Vocational Special Education Coordinator and the Work-Study Coordinator. In 1982-83, sixty-six Vocational Special Education Coordinators served handicapped youth and their instructors in vocational education settings in Ohio. Many systems also employ numerous Work-Study Coordinators to assist the handicapped in job seeking, preparation, and placement. School districts will have the services of one, both, or neither. Where they exist, their duties are prescribed by the Ohio Rules for the Education of Handicapped Children but will vary according to the needs and dictates of the local district.

VOCATIONAL SPECIAL EDUCATION COORDINATOR -- Services provided by this relatively new member of the professional team include:

- Providing assistance in vocational evaluation
- Monitoring students' progress in accordance with the IEP
- Assisting in developing the IEP and vocational education program
- Assisting in developing and modifying curriculum and instructional materials
- Assisting in developing instructional and classroom management techniques
- Providing supplemental instruction as needed
- Providing liaison services to the home school and parents
- Serving as liaison among professionals.

WORK-STUDY COORDINATOR -- Services of a Work-Study Coordinator shall include the following tasks, which relate to vocational education students in addition to other services for handicapped students in the home school:

- Assisting in developing and delivering a services continuum to meet the needs of students in grades 9-12, which shall include but not be limited to: prevocational services, in-school work experience, sheltered workshop, community work experience, vocational education;
- Providing assistance in placing handicapped students;
- Facilitating vocational evaluation;
- Locating, screening, and evaluating students in work placement stations;
- Assisting students in developing positive work behavior and attitudes.

Obviously, the Work-Study Coordinator and the Vocational Special Education Coordinator can be of great help to both students and instructors. The key to a successful partnership in providing services to handicapped students is to develop and maintain open and frequent communication among professional team members.

Handicapped students may also receive remedial services from the special needs funded math and reading specialists located in many vocational education settings.

Community Services

Many community agencies and organizations offer students supportive services not available through the school system.

Financial, medical, psychological, and other forms of aid are offered by social agencies, churches, clubs, professional and fraternal organizations, civic and service groups as well as by mental health associations and Goodwill Industries.

The vocational instructor should also be aware of potential assistance from state and federal agencies such as rehabilitation and employment services, Manpower programs, and the Social Security Administration.

Of all the potential sources of aid, the Bureau of Vocational Rehabilitation (BVR) is the one that all vocational instructors should understand thoroughly. Their providing direct services to handicapped students makes BVR a valuable member of the vocational education support team.

A partial listing of services that the Bureau of Vocational Rehabilitation (BVR) may provide include:

Evaluation
(medical, psychological, vocational)

Physical restoration

Therapeutic services

Prosthetic devices

Tools, equipment, licenses

Employment training

Counseling

Transportation

Job placement

For instance, a handicapped student who is ready for his or her first job (after vocational education training) may need dental treatment before he/she will be accepted by a food service employer. In addition, the student may come from an impoverished family who cannot provide bus money to enable the student to reach his/her prospective job. Further, the employer may require a complete physical examination before hiring any new employee to work in the foods area. BVR can assist this handicapped student by providing dental services, bus ticket money until the student receives the first paycheck, and a medical examination. Such additional services as vocational training will not be provided until after the student leaves the public school system, but facilitating services may be provided as long as they are not services which the school system can provide.

Once the handicapped student has received services from BVR, his/her file is closed. If that individual loses a job at any time, BVR may open the file and assist him/her in securing another job. If further training is necessary, BVR may contract for such training at no cost to the individual.

Helpful References/Additional Resources

Puzzled About Handicapped Students?
A Handbook on Modifying Curricula for Handicapped Students
The Vocational Studies Center
University of Wisconsin-Madison
Publications Unit
265 Educational Sciences Building
Madison, WI 53706
(608) 263-4357

If you are still concerned about handicapping conditions, program modifications, and how you can best serve your special needs students, one authoritative, comprehensive resource volume produced by Lloyd W. Tindall, John J. Gugerty, and Associates at the University of Wisconsin (Madison) addresses such areas as handicapping condition(s), federal guidelines/definitions, mainstreaming, learning strategies, supportive services/personnel, and helping strategies/program implementation aids.

Handbook of Special Vocational Needs Education
by Gary Meers (1980)
Aspen Systems Corporation
1600 Research Boulevard
Rockville, MD 20850

A leading textbook dealing similarly with handicapped students, it is one of the most useful texts currently produced because it is written from a vocational special needs perspective.

"Better Than I Thought"
BTIT
The Vocational Studies Center
University of Wisconsin-Madison
Publications Unit
265 Educational Sciences Building
Madison, WI 53706
(608) 263-4357

This is a series of eight sound film strips preparing the vocational instructor to meet the needs of handicapped students. Each film strip describes a category of handicap, enlists empathy, and indicates the degree and kind(s) of modification(s) required to adapt vocational instruction to handicapped students.

Characteristics of Handicapped Students (SN 21B)

a. Another Step Forward (SN 21)
b. Mainstreaming Handicapped Students (SN 21A)
c. A System of Management (SN 21C)
d. Evaluation and Placement (SN 21D)
e. Architectural Considerations for a Barrier Free Environment (SN 21E)

Series of five volumes published in 1979 by the University of Florida (Gainesville) through the National Center for Research in Vocational Education:
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

This particular series of five handbooks is of value to the vocational special needs instructor because it addresses a broad spectrum of ideas and concepts with regard to handicapped students, answers some of the most commonly asked questions, and serves as an excellent resource.

Journal for Vocational Special Needs Education
by the Association of Vocational Special Needs Personnel
published in January, April, and October
Center for Vocational Personnel Preparation
Reschini House
Indiana University of Pennsylvania
Indiana, PA 15705

This journal, published three times yearly, is especially helpful to the vocational special needs instructor. It is the only publication which meets the special needs of instructor questions about handicapped students: it provides current and specialty features and ideas of a topical nature in special needs education.

Serving Handicapped Students in Vocational Education: A Guide for Counselors (1979)
by Marla Peterson
National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

Although originally designed for use primarily by counselors, this resource material is helpful to the vocational special needs instructor in assessing enrollment criteria (for vocational programs). In addition, it also deals well with the importance of legislation affecting the vocational programs.

Vocational Education: Teaching the Handicapped in Regular Classes
Ed. Robert Weisgerber (1978)
by the Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

This text serves a broad range of fundamental areas of special interest to the vocational special needs instructor, including those of general understanding, attitudes, and communications.

Job Placement

Perhaps the most fundamental concern of every vocational instructor is appropriate, long-term job placement for students. In times of economic uncertainties and growth of technology, the job placement process becomes more difficult. The placement of handicapped students on jobs seems to some vocational instructors to compound the problem, but that need not be the case if the following guidelines are adhered to:

Prepare the way for interviews:

- simulate interviews
- provide "leads" to students
- help students arrange date of and transportation to the interview
- call ahead to "introduce" student to interviewer

Stress student competencies rather than weaknesses, such as:

- excellent attendance
- specific skills (help students make list)
- ability/willingness to follow directions/accept authority
- good social skills (team worker)

Provide appropriate and frequent follow-up to evaluate:

- students' interviewing experiences
- students' adjustment to and questions about new job sites
- employers' questions about students and/or placement process

The information gained from these suggested procedures may serve not only to assist students in the job placement process but also to provide the basis for continued program change and growth.

More specific suggestions for job placement are contained in the following checklist:

EMPLOYMENT PLACEMENT CHECKLIST

	DO		DON'T
1.	Review required and acquired skills/ techniques.	1.	Place students where employers exhibit obvious prejudices.
2.	Remind students of skills for each occupational role or title.	2.	Permit students to work at menial jobs or those incorporating demeaning tasks.
3.	Monitor student placements regularly.	3.	Allow students to place themselves in compromising situations.
4.	Emphasize the importance of dress, attitude, punctuality.	4.	Overload a particular employer with student placements.
5.	Follow up interviews with employers to get impressions and answer forgotten questions.	5.	Dwell on students' personal deficiencies, except as they affect the work environment.
6.	Make sure students attend interviews alone.	6.	Discuss salary unless mentioned by the prospective employer.
7.	Underscore the importance of being ready to work with a minimum time delay.	7.	Use employment agencies that charge a fee for their services.
8.	Stress the reality of the work force.	8.	Overprotect students from the realities of the work place.

Related Employability Skills

In the areas of job seeking and general employability skills, handicapped vocational students need much help. It is widely recognized that employees do not lose jobs because of a lack of specific work skills nearly as much as from a failure to follow work rules, a poor attitude toward their work, or an inability to get along with their supervisors and/or fellow workers.

In addition, handicapped students need training and sufficient practice in areas such as filling out job application forms, writing resumes, interviewing, performing introductions, and practicing other basic social skills. Additional attention on the part of the instructor to basic job seeking-and-keeping skills will result in increased comfort and employability of handicapped students.

Other Concerns

Vocational instructors should be aware that federal legislation prohibits discrimination against the handicapped in the following areas:

Recruitment	Promotion
Hiring	Transfers
Layoffs	Rates of Pay
Job Assignments	Leaves of Absence
Sick Leave	Fringe Benefits
Training Opportunities	Employer-sponsored Activities

Employers often raise questions about possible increased risk factors as well as insurance coverage and premiums involved in hiring handicapped employees.

> Many employers have the misconception that their workmen's compensation premiums will automatically increase if they hire a person with a handicap. Insurance companies do not compute premiums on the basis of the physical condition of employees. Premiums are computed on the basis of the classification of the **employer.** An employer's classification is determined by the nature of the firm and hazards related to that firm. **Appropriately placed persons with handicaps are no more prone to on-the-job accidents than are non-handicapped persons.** (Brolin, 1978)

Summary

Vocational instructors and administrators, more than anyone else, have been responsible for the successes of handicapped students who have enrolled in and benefitted from vocational education programs. These educators saw the need and met the challenge with innovative practices and professional commitment.

The task is not finished. As special education has provided services not only to increasing numbers of handicapped students but also to more seriously impaired students, so must vocational education seek to increase their accessibility to and successful completion of vocational education programs.

Much of what remains to be done will be a logical extension of current practices. The regular, on-going follow-up procedures employed by all vocational instructors will aid in meeting the day-to-day needs of current students. In addition, the one- and five-year follow-ups required by the Ohio State Department of Education provide more in-depth information. These statistics can serve to evaluate the long-term effects of a vocational education program and can identify the framework of needed programmatic changes which will help handicapped students achieve success in such programs.

This document should aid vocational educators in serving handicapped youth more effectively. It is difficult to make general statements about handicapped individuals because, indeed, they are just that—individuals. They have individual needs, problems and weaknesses; they also have individual goals, strengths and personalities.

Vocational educators have the opportunity and the challenge to become a significant influence in the lives of handicapped students who seek to achieve human dignity through preparation for their maximum potential involvement in the adult world of work and independent living.

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